



1000735

Draft

Date: 10-25-90

TID: 0590-1033

To: David Payne

Task: 3815

From: Duane Kruse *DK*

cc: George Schupp

Subject: Review of the SAP and QAPP (revision 3) for the RFI of Quemetco, Inc.

A technical review of the sampling analysis plan (SAP) and the quality assurance project plan (QAPP) has been completed. This review covers the third revision of the SAP and QAPP dated Sept. 26, 1990. This review focuses on the analytical methods selected for characterization of the site and the quality control that will be used to assure that usable data will be generated by the laboratory.

This QAPP was previously reviewed on 7-9-90 and many deficiencies were found and noted in the report. A meeting was held with representatives of Cannonie Environmental and Northern Laboratories on 7-25-90. The deficiencies were discussed and agreements to correct these were made by Cannonie and Northern Labs.

Most of the major deficiencies and all of the minor deficiencies have been corrected. Some major deficiencies remain uncorrected and are discussed in the following sections.

Major Deficiencies

Sampling and Analysis Plan (SAP)

Table 3 in the SAP contains several errors and omissions that were mentioned in the previous review. For solid samples, the test method for total solids must also be included. Analysis of lead by ICP should be an option on all solid samples. "USEPA 3050/6010 Lead" should be added to all solid samples and it should be foot noted to explain that this will only be used when the lead concentration in the digestate exceeds five times the ICP instrument detection limit for lead. "USEPA TCLP/3010/6010 Lead" must be added with the same foot note.

Table 3 also lists the digestion method for graphite furnace lead in water samples as 3005 which is an ICP method. This must be changed to 3020. For clarity, "USEPA 3050/ A/A Total Metals" should be changed to "USEPA 3050/6010 TAL Total Metals".

Table 4 lists the analyte detection limits. Detection limits for chloride, sulfate, total suspended solids and total solids must be

included. All of the solid sample detection limits are listed with the less than symbol (<). This should be removed and a foot note added that explains that the detection limit will vary based on the weight of sample digested and the total solids content of the soil. If one gram of sample were digested with a total solids content less than 100 %, all of the metals detection limits would be larger than, not less than those listed in the table.

Quality Assurance Project Plan (QAPP)

The total solids test must be added to Tables 1 and 2.

In Table 2, the digestion method 3020 should also list water samples. pH method 9040 is for water samples but sediment and slag samples are listed for this method. These solid samples must be listed for pH method 9045.

The previous review also requested that validation of the data was to be addressed by the QAPP. A copy of the data validation guidelines used for CLP data cases was sent to Northern Laboratories. Data validation as addressed in the QAPP refers to checking for errors in the laboratory calculations and in the data base for this project. It does not address the usability of the data based on the quality control audits. This issue must still be addressed.

Appendix A Laboratory QA/QC Manual

A table is included that lists the QC limits for duplicates, check standards, spikes and blanks. Chloride and total solids limits must be added to this table. Limits for extraction blanks and extraction duplicates for TCLP metals must also be added to the table.

This section limit also includes the SOPs for the tests requested. The SOP for pH in water samples is EPA 150.1. This must be replaced with method 9040, which is listed throughout the QAPP and SAP. SOPs for chloride, total solids and sulfate in water (9036) must also be included.

The laboratory has chosen to use a lithium chloride extraction procedure to prepare soil samples for sulfate analysis. Method 426C from Standard Methods will be used to determine sulfate in the soil extracts. The extraction procedure presented in the sulfate SOP is acceptable. The outline for the turbidimetric determination of sulfate in the extract is not acceptable. The outline is incorrectly numbered and the steps required to perform method 426C do not include enough detail. The details that need to be added should include the composition of buffers A and B, and the composition of the standard solutions. The SOP must also include a statement about how the spectrometer will be zeroed and what solution will be used. The stirring time that is required to

generate a consistent flock must also be stated.

The SOP for ICP metals includes printouts from the computer showing the instrument settings, background correction and interelement corrections. No information for tin was provided. This must be corrected.

Minor Deficiencies

QAPP

Section 5 references bottle cleaning procedures "outlined below" and no procedures are listed.

Section 8.2 lists the sources of the test methods. Methods from USEPA Methods for Waters and Wastes, and Standards are used and should also be referenced in this section.

SAP

Section 4.2 does not mention preparation method 3005 which is included in Table 3 of the SAP. Method 7870 is also listed as a flame method for tin in this section, but the tin is listed as an ICP metal in all tables. Reference to method 7870 must be deleted.

Section 4.3, page 16, includes the target analyte list (TAL) for metals and the methods to be used. Method 7471 should also be included for mercury in solid samples.

Summary

The revised SAP and QAPP are greatly improved from previous versions, but changes must still be incorporated. The following is a list of the changes that must be made for these documents to be acceptable.

1. The total solids test method must be added to Tables 1 and 2 of the SAP, Tables 1 and 2 of the QAPP and to the QC table in Appendix A.
2. The use of ICP for lead analyses must be clearly stated as an option to be used for all matrices except TCLP extracts. In addition, this option must be used only when the lead concentration in the digestate exceeds the ICP instrument detection limit by a factor of five. This must be made clear in Table 3 of the SAP.
3. The digestion method for lead by graphite furnace must be corrected in Table 3 of the SAP.

4. Table 4 in the SAP must include detection limits for chloride, sulfate and total solids. The detection limits for solid sample results must be clarified.
5. In Table 2 of QAPP, method 3020 must list some water samples and soil samples must be removed from method 9040 and added to method 9045.
6. Data validation and data usability must be addressed.
7. QC limits must be added to the QC table in Appendix A for the following parameters: Chloride, total solids and TCLP extractions.
8. SOPs for chloride, total solids and sulfate in water must be included in Appendix A.
9. The SOP for sulfate in soils must include more detail from method 426C. The additional detail must include the composition of buffers A and B, and the standard solutions. The SOP must also address the method and the solution that will be used to zero the spectrometer. The stirring time required to generate a consistent flock must also be specified.
10. ICP instrument setting for tin must also be included in Appendix A.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: FEB 1 1988
SUBJECT: Chemetco, Inc.
ILD 048 843 809

FROM: William H. Miner, Acting Chief
Solid Waste Branch

TO: James Adams, Chief
Quality Assurance Office

Attached is the subject facility's response to our January 11, 1988, disapproval of their Site Specific Sampling and Analysis Quality Assurance Project Plan. This information along with information sent to you by memorandum of January 19, 1988, should address the deficiencies previously identified.

An expedited review of this additional information will be appreciated.

If you have any questions please contact Mr. Kevin Pierard, at 886-4466.

Attachment

U.S. EPA Comments
Quality Assurance Project Plan
Chemetco, Inc.

1. Page 6, Section 3.0

"Test Methods for Evaluating Solid Waste", SW-846, July, 1982 is referenced. The method provided as Appendix A-4 is Method 1310, dated September, 1986. This inconsistency must be corrected.

2. Page 25, Table 7.1

The EP extract should be preserved with nitric acid to pH less than 2.

3. Page 31, Table 9.0

See item 1.

4. Pages 36-38, Section 11

Provide a specific description of what control limits will be acceptable for precision and accuracy. The performance criteria for blind samples must be described. Actions to be taken if the limits are exceeded must be specified.

5. Page 47, Section 14

The preventative maintenance protocol for L.C. Metals is not included in Appendix A-8.

6. Page 48, Section 15

(The "Handbook for Analytical Quality Control" EPA 600/4-79-019 p. 6-5 states that an out-of-control situation occurs when (a) any point is beyond the control limits and (b) when there are seven successive points on the same side of the value P of the central line.) The facilities, equipment and services for organics analyses at Compuchem are described, since the analytes of interest are lead and cadmium, these must also be included.

7. Appendix A-8

Laboratory space and facilities should include a description of equipment available for EP toxicity analysis.

please phone at your convenience. Questions can be directed to me at 618-254-4381. Thank you for your speedy attention.

Sincerely,

A handwritten signature in cursive script, appearing to read "Michelle Reznack".

Michelle Reznack
Environmental Manager

cc: Harry Chappel, IEPA



FIRST IN PEOPLE - QUALITY - SERVICE

P.O. BOX 187 • ALTON, ILLINOIS 62002

Kevin Pierard, RCRA Enforcement
United States Environmental Protection Agency
Region V
230 South Dearborn Street
Chicago, Illinois 60604

Dear Kevin,

Pursuant to a letter from your office on the 11th of January, Chemetco, Inc. is submitting the following additions and revisions to the Site Specific Sampling and Analysis QAPP in addition to those submitted on December 29th, 1987. As time is of the essence, your prompt review of these would be greatly appreciated.

1.) Page 6, Section 3.0

The method to be used is that provided in Appendix A-4, Method 1310, dated September 1986. This has been corrected in the QAPP also.

2.) Page 25, Table 7.1

The extract will be preserved with reagent grade nitric acid until the pH is less than 2.

3.) Page 31, Table 9.0

See item 1.

4.) Pages 36-38, Section 11

See attachment titled "Quality Assurance Control Limits."

5.) Page 47, Section 14

See attachment titled "Preventative Maintenance."

6.) Page 48, Section 15

Out-of-control situation determinants have been changed according to the guidelines suggested in your letter referencing the "Handbook for Analytical Quality Control" EPA 600/4-79-019, p. 6-5. The facilities, equipment and services for lead and cadmium analysis at CompuChem have been included in the Appendices.

7.) Appendix A-8

Specific equipment for the EP toxicity analysis has been included in the laboratory space and facilities section.

As well as noting above where these changes will be found, I have made the changes and enclosed copies of the pages that the changes may be found on. If you need anything further,

SHE-12

JAN 11 1988

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Michelle Reznack, Environmental Manager
Chemetco, Inc.
P.O. Box 187
Alton, Illinois 62002

Re: Chemetco, Inc.
IID 048 843 809

Dear Ms. Resnack:

The United States Environmental Protection Agency (U.S. EPA) has completed its review of the Site Specific Sampling and Analysis QAPP, for the referenced facility, and its performance evaluation of L.C. Metals Laboratory.

The U.S. EPA hereby disapproves the QAPP and the use of L.C. Metals Laboratory. The enclosed comments summarize the reasons for this disapproval.

On December 29, 1987, U.S. EPA received a modification to the QAPP from Chemetco which may address some of these comments. These modifications are currently under review.

If you have any questions please contact Kevin Pierard at (312) 886-4456.

Sincerely yours,

ORIGINAL SIGNED BY

WILLIAM E. MUNO

William E. Muno, Chief

RCRA Enforcement Section

Enclosure

cc: Harry Chappel, IEPA

bcc: Roger Grimes, ORC

5HE-12:Kevin:lr:1/6/88:#32

4528

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: JAN 19 1988

Chemetco, Inc.

SUBJECT: ILD 048 843 809

FROM: William H. Miner, Chief
Solid Waste Branch

W. H. Miner

TO: James Adams, Chief
Quality Assurance Office

QUALITY ASSURANCE BRANCH

JAN 21 1988

ENVIRONMENT SERVICES DIVISION

Attached is additional information to assist your review of the subject facility's Site Specific Sampling and Analysis Quality Assurance Project Plan, and the performance evaluation of L. C. Metals Laboratory.

Please review this additional information to determine if it addresses the deficiencies previously noted.

If you have any questions please contact Mr. Kevin Pierard at 886-4466.

Attachment

RECEIVED

JAN 25 1988

U.S. EPA CENTRAL
REGIONAL LAB

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: December 16, 1987

SUBJECT: Chemetco, Inc. ILD 048 843 809

FROM: Andrea Jirka, Chief *AJ*
Data Quality Assurance Branch

TO: William H. Miner, Acting Chief
Solid Waste Branch, WMD

The subject Quality Assurance Project Plan cannot be approved at this time. The following items need to be addressed:

ITEM 1: Page 6, Section 3.0

"Test methods for Evaluating Solid Waste", SW-846, July, 1982 is referenced. The method provided as Appendix A-4 is Method 1310, dated September, 1986. Please resolve this inconsistency.

ITEM 2: Page 25, Table 7.1

The EP extract should, preferably, be preserved with nitric acid to pH less than 2.

ITEM 3: Page 31, Table 9.0

See Item 1.

ITEM 4: Pages 36-38, Section 11

Please be specific in describing what control limits will be acceptable for precision and accuracy. The performance criteria for blind samples should be described. Actions to be taken if the limits are exceeded should be specified.

ITEM 5: Page 47, Section 14

The preventative maintenance protocol for L. C. Metals is not included in Appendix A-8.

ITEM 6: Page 48, Section 15

The "Handbook for Analytical Quality Control" EPA 600/4-79-019 p. 6-5 states that an out-of-control situation occurs when (a) any point is beyond the control limits and (b) when there are seven successive

points on the same side of the value \bar{P} of the central line. Appendix A-3. The facilities, equipment and services for organics analyses at Compuchem are described. Since the analytes of interest are lead and cadmium, these should be described also.

Appendix A-8, Page 8, Section 5.5

Field preservation and handling should be described if they are appropriate for this study.

Appendix A-8

Laboratory space and facilities should include a description of equipment available for EP Tox analyses.

If you have questions or need additional information about the above subject, please contact Maxine C. Long, at (312) 353-3114.

Steve / Dave Payne
This is a followup to a request for

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: December 1, 1987

SUBJECT: Chemetco, Inc. ILD-043-843-809

FROM: Andrea Jirka, Chief *AJ*
Data Quality Assurance Branch

TO: William H. Miner, Acting Chief
Solid Waste Branch

*Audit that I sent
over on 12/1/87 to
Steve. Provide a
similar memo laying
out plan of action
CK*

Your request for a laboratory audit of LC Metals Laboratory has been referred to Curtis Ross, Director, Central Regional Laboratory. The CRL has responsibility for such audits. The Quality Assurance Section, DQAB will continue to review the above subject Quality Assurance Project Plans (QAPPs). Comments will be forwarded by COB 12/11/87

If there are any questions, please call Maxine Long at 353-3114.

Coordinate to

Steve / Dave

Please prepare to Audit this Lab ASAP

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: NOV 16 1987

SUBJECT: Chemetco, Inc.
ILD 048 843 809

FROM: William H. Miner, Acting Chief
Solid Waste Branch

TO: James Adams, Chief
Quality Assurance Office

and prepare a letter to Minor from me stating time frame. we will do it in 4185

Attached is one copy of a Sampling and Analysis Quality Assurance Project Plan (QAPP) for slag sampling at the subject facility. This is similar to a QAPP prepared by Jacobs Engineering and submitted to your office in May 1987. Chemetco has decided to conduct the sampling themselves rather than the United States Environmental Protection Agency contractor (Jacobs Engineering). This plan proposes the use of L.C. Metals Laboratory for analysis of the slag samples.

Please review the QAPP and conduct a laboratory audit of L.C. Metals Laboratory to determine if this plan is acceptable. Please provide my office with your comments by ~~December 1, 1987~~ *12/11/87 per phone conversation with Kevin 11/17/87 (JA)*. If you have any questions please contact Mr. Kevin Pierard at 886-4466.

Attachment

Jane Drumheller
(618) 877 2755

QUALITY ASSURANCE BRANCH
NOV 16 1987
ENVIRONMENT SERVICES DIVISION

Best W

File III c 8 a

4185

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: NOV 16 1987

SUBJECT: Chemetco, Inc.
ILD 048 843 809

FROM: William H. Miner, Acting Chief
for Solid Waste Branch

Wm. E. Miner

TO: James Adams, Chief
Quality Assurance Office

Attached is one copy of a Sampling and Analysis Quality Assurance Project Plan (QAPP) for slag sampling at the subject facility. This is similar to a QAPP prepared by Jacobs Engineering and submitted to your office in May 1987. Chemetco has decided to conduct the sampling themselves rather than the United States Environmental Protection Agency contractor (Jacobs Engineering). This plan proposes the use of L.C. Metals Laboratory for analysis of the slag samples.

Please review the QAPP and conduct a laboratory audit of L.C. Metals Laboratory to determine if this plan is acceptable. Please provide my office with your comments by ~~December 1, 1987~~ *12/11/87 per phone conversation with Kevin 11/17/87 (JA)*
If you have any questions please contact Mr. Kevin Pierard at 886-4466.

Attachment

QUALITY ASSURANCE BRANCH

NOV 16 1987

ENVIRONMENT SERVICES DIVISION

III C, 8, a

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: May 18, 1987

SUBJECT: Chemetco, Inc. ILD 048 843 809

Maxine C. Long
for
FROM: James H. Adams, Chief
Quality Assurance Office

TO: William H. Miner, Chief
Hazardous Waste Enforcement Branch

ATTENTION: Kevin Pierard

This memo transmits the signed copy of the subject Quality Assurance Project Plan. If there are questions, please call Maxine Long at 3-3114.

File III C 8a

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

2531

QUALITY ASSURANCE BRANCH

MAY 13 1987

ENVIRONMENT SERVICES DIVISION

DATE: MAY 11 1987
SUBJECT: Chemetco, Inc.
ILD 048 843 809

FROM: William H. Miner, Chief *William H. Miner*
Hazardous Waste Enforcement Branch

TO: James Adams, Chief
Quality Assurance Office

Attached are two copies of the Sampling and Analysis Quality Assurance Project Plan (QAPP) for slag sampling at the subject facility. The QAPP has been revised per your comments dated March 23, 1987. Please review and sign copy (1) and return it to this office by May 22, 1987.

If you have any questions please contact Mr. Kevin Pierard, at 886-4466.

Attachment

File III C 4

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: MAR 12 1987

SUBJECT: Chemetco, Inc.
ILD 048 843 809

FROM: William H. Miner, Chief
for Hazardous Waste Enforcement Branch

TO: James Adams, Chief
Quality Assurance Office

2042
QUALITY ASSURANCE BRANCH

MAR 18 1987
Wm. E. Miner
ENVIRONMENT SERVICES DIVISION

Attached is a Quality Assurance Project Plan (QAPP) for sampling and analysis of slag samples at the subject facility. The samples will be analyzed at Compuchem Laboratories utilizing E.P. Toxicity procedures for lead and cadmium. The QAPP was prepared by Metcalf and Eddy as part of a U.S. EPA work assignment under the Technical Enforcement Support Contract. I have also attached for your information a memo (dated 12-18-86) regarding our previous attempts to characterize this waste using existing data.

Please review the QAPP and provide my office with your comments by April 6, 1987.

If you have any comments regarding this matter please contact Mr. Kevin Pierard, at 886-4466.